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EXAMINER	
PATEL, SHAMBHAVI K	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,262	GATTEGNO, YVES	
	Examiner	Art Unit	
	SHAMBHAVI PATEL	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-46 have been presented for examination.

Response to Arguments

2. In view of Applicant's amendment, the objection to the specification is withdrawn.

3. In view of Applicant's amendments, the 35 U.S.C. 101 and the 35 U.S.C. 112 rejections are withdrawn.

4. Applicant's arguments regarding the prior art rejection have been fully considered, but are moot in view of the new grounds of rejection presented below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-6, 11-29 and 38-46 are rejected under 35 U.S.C. 103(a)** as being unpatentable over **Flouris ("The Network RamDisk: Using Remote Memory on Heterogeneous NOWs")** in view of **Han (US Patent No. 5,991,542)**.

Regarding claim 1:

Flouris discloses a method, performed by a suitably programmed computer, for software emulation of hard disks of a data processing platform at the level of the operating system with parameterizable management of requests for writing and reading data consisting in:

a. creating a representation of a real hard disk **(page 10: NRD client asks as a normal disk)**wherein the sequence and location for loading and execution of components of the operating system of the data processing platform may be modified **(section 4.1.6: filenames ordered in random permutations)**

b. loading on said data processing platform one or more peripheral drivers **(section 3.1: NRD client is a disk device driver)**, wherein at least one of the peripheral drivers communicates with a data storage support containing the data of the representation of the real hard disk **(section 2.1: once the driver is mounted the RamDisk operates as a regular disk).**

c. simulating the behavior of the real hard disk for the operating system **(section 4: performance of RamDisk measured by running the software)**

Flouris does not explicitly disclose transforming programming contained on the real hard disk into an emulated hard disk. **Han teaches** using disk images to emulate storage volumes **(abstract)** wherein programming contained on the real hard disk in transformed into an emulated hard disk **(abstract: image of a data storage volume is stored in a file)** wherein the emulated hard disk is capable of controlling read and write operations **(column 5 lines42-45: read and write requests)** on a client station and among two or more client stations **(column 7 lines 58-50: client computers).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Flouris and Han because the use of said image files allows for independence from format requirements, the ability to compress the data, and end-to-end verification **(Han: column 2 lines 33-53).**

Regarding claim 2:

Flouris discloses the method of claim 1 wherein the management of said data write requests that the operating system sends to the emulated hard disk is accomplished at the peripheral driver level **(section 3.1 driver controls requests),** the written data being stored according to the parameterization of the peripheral drivers in the random access memory accessible to the OS using the emulated hard disk **(page 2: RAM used to store data).**

Regarding claim 3:

Flouris discloses the method as claimed in claim 1 wherein the management of said data read requests that the operating system sends to the emulated hard disk is accomplished at the peripheral driver level **(section 3.1: driver controls requests),** the readings of previously written data being performed in the random access memory accessible to the operating system using the emulated hard disk **(page 2: RAM used to store data)**

Regarding claim 4:

Flouris discloses the method as claimed in claim 1 wherein the emulation of the hard disk is accomplished by the agency of a single monolithic peripheral driver **(section 2 1st paragraph; section 2.1: one peripheral driver controls all requests)** which communicates with the OS in the manner of a hard disk **(page 10: behaves like a normal hard disk)** and which communicates with the support containing the data of said emulated hard disk in a manner specific to this support **(section 2.2).**

Regarding claim 5:

Flouris discloses the method as claimed in claim 1, wherein the data of the emulated hard disk or disks are accessible to the client station via a data processing network **(section 2.1: clients and servers connected through network).**

Regarding claim 6:

Flouris discloses the method as claimed in claim 1, wherein when an emulated hard disk is started up, the method further comprises a low level micro-software module to access data contained in the emulated hard disk

wherein the operating system is started up at the client station **(page 10 1st full paragraph: interface used during start up).**

Regarding claim 11:

Flouris discloses the method as claimed in claim 5, wherein at least one peripheral driver loaded and executed by the operating system of the client station provided the functions of access, via the data processing network, to the data contained in the emulated hard disks **(section 3.1: driver controls all requests).**

Regarding claim 12:

Flouris discloses the method as claimed in claim 1 wherein if the data support does not provide for writing in real time, or does not to accept the writing of data directly in the data of the hard disk **(section 2.2 not real-time)**, the data writing requests issued by the operating system to the emulated hard disks are processed in a way such that the written data are stored in a storage space different from the data support containing the data of the emulated hard disks **(section 2.3.2: data can be stored on any one of the multiple servers).**

Regarding claim 13:

Flouris discloses the method as claimed in claim 12 wherein the data writing requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in the RAM of the client station **(section 2.1: RAM used to store data).**

Regarding claim 14:

Flouris discloses the method as claimed in claim 12, wherein the data writing requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in the virtual memory of the client station **(section 2.3.3: virtual memory used to store data).**

Regarding claim 15:

Flouris discloses the method as claimed in claim 12 wherein the data writing requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in a data file accessible to the operating system of the client station **(section 2: clients use network to access all servers storing data).**

Regarding claim 16:

Flouris discloses the method as disclosed in claim 1 wherein the data writing requests issued by the operating system are redirected to a single storage space, and wherein the storage space in which the written data are redirected may be changed during an operating session of the operating system of a client station **(section 2.3.1: client can send data to different servers).**

Regarding claim 17:

Flouris discloses the method claimed in claim 12, wherein the storage space used for the storage may be volatile, or nonvolatile so as to permit the written data of an operating session of the operating system to persist from one client station to another **(section 2; section 2.3.3: both volatile and nonvolatile memory used, such as RAM).**

Regarding claim 18:

Flouris discloses the method as claimed in claim 1 wherein the volatile character of the redirections of the written data is determined upon initialization of the operating session of the operating system of a client station **(section 2.3.3: during configuration appropriate server determined).**

Regarding claim 19:

Flouris discloses the method as claimed in claim 1, wherein the data reading requests issued by the operating system are performed in different storage spaces during an operating session of the OS of a client system **(section 2.2: during each session multiple servers may be used).**

Regarding claim 20:

Flouris discloses the method as claimed in claim 19, wherein the data reading requests issued by the OS to an emulated hard disk carried out in different storage spaces follow an order of priority **(section 2.2).**

Regarding claim 21:

Flouris discloses the method as claimed in claim 1, wherein a server program is in charge at one of the client stations of the data processing network, on the one hand, of the communications via the data processing network with the client station accessing the emulated hard disks **(section 2.1 NRD server handles communication over network with clients)**, and on the other, of accessing the data support containing the data of the emulated hard disks **(section 2.2: server handles requests by accessing appropriate data).**

Regarding claim 22:

Flouris discloses the method as claimed in claim 21, wherein if the hard disk emulation system is parameterized so that the data write requests received by the server program are intended for a specific emulated hard disk they are not redirected but stored directly in a support containing the data of the emulated hard disk itself **(sections 3.1 and 3.2: client and server can be on same machine; section 2.2 can try multiple servers)** and only client station can access said emulated hard disk at a given time **(section 2.1: functions as normal disk).**

Regarding claim 23:

Flouris discloses the method of claim 21, wherein in order to permit several client stations to access an emulated hard disk simultaneously, the server program is capable of redirecting specifically the data write requests issued by a client station to a given storage space **(section 3.2: during one operating session multiple servers can be used)** and of redirecting the data write requests issued by another client station to another given storage space **(section 2.2: data can be directed to multiple serves).**

Regarding claim 24:

Flouris discloses the method as in claim 1 wherein in order to permit the startup form and/or simultaneous access to the same emulated hard disk of 100% identical copies of the same emulated hard disk, components of the

operating system loaded and executed by the client stations or server programs are capable of modifying during or before their use by the operating system data contained in the emulated hard disk **(section 2.2 during one operating session multiple servers can be used).**

Regarding claim 25:

Flouris discloses performing emulation for the OS of the client stations at the level of the class of virtual peripherals of the file system type **(section 3.1: drivers control requests).**

Regarding claim 26:

Flouris discloses performing the emulation for the OS at the level of the class of disk peripherals and not at the file system level **(section 2).**

Regarding claim 27:

Flouris discloses the method as claimed in claim 1, wherein the data contained in the emulated hard disk are copied by a software tool executed at a client station from the real hard disk **(section 2: configuration process).**

Regarding claims 28 and 29:

Flouris discloses the method as claimed in claim 27 wherein the software tool creates an image file and directory that contains the data of the emulated hard disk **(section 3).**

Regarding claim 38:

Flouris discloses the method as claimed in claim 5, wherein the server module making the data contained in the emulated hard disks available to the client stations may use any suitable network protocol **(sections 2 and 3: any network may be used for client and server). Han teaches** using the iSCSI protocol **(column 5 lines 25-30).**

Regarding claim 39:

Flouris discloses the method as claimed in claim 5, wherein the low level software program executed by the client stations and permitting access to the data contained in the emulated hard disks may use any suitable network protocol **(sections 2 and 3: any network may be used for client and server). Han teaches** using the iSCSI protocol **(column 5 lines 25-30).**

Regarding claim 40:

Flouris discloses the method as claimed in claim 11, wherein the peripheral driver may use any suitable network protocol **(sections 2 and 3: driver can be loaded on multiple clients). Han teaches** using the iSCSI protocol **(column 5 lines 25-30).**

Regarding claim 41:

Flouris discloses the method as claimed in claim 21 wherein if the data support does not provide writing in real time, or does not accept the writing of data directly in the data of the hard disk **(section 2.2 not real-time)**, the server program providing the emulation of the hard disk at the client stations processes the data write requests issued by the operating system in such a way that the written data are stored in a storage space different from the data support containing the data of the emulated hard disks **(section 2.3.2: multiple servers used during one operating session).**

Regarding claim 42:

Flouris discloses the method of claim 21 wherein the data write requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in the random access memory of the server station **(page 2: RAM used to store data).**

Regarding claim 43:

Flouris discloses the method as claimed in claim 21, wherein the data writing requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in the virtual memory of the client station **(section 2.3.3: virtual memory used to store data).**

Regarding claim 44:

Flouris discloses the method as claimed in claim 21 wherein the data writing requests issued by the client station operating system to the emulated hard disks are processed in such a way that the written data are stored in a data file accessible to the operating system of the client station **(section 2: clients can access servers).**

Regarding claim 45:

Flouris discloses the method claimed in claim 21, wherein the storage space used for the storage may be volatile, or nonvolatile so as to permit the written data of an operating session of the operating system to persist from one client station to another **(section 2; section 2.3.3: volatile and nonvolatile memory used such as RAM).**

Regarding claim 46:

Flouris discloses the method as claimed in claim 16 wherein the volatile character of the redirections of the written data is determined upon initialization of the operating session of the operating system of a client station **(section 2.3.3: configuration process).**

6. Claims 7-10 and 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flouris ("The Network RamDisk: Using Remote Memory on Heterogeneous NOWs") in view of **Han (US Patent No. 5,991,542)** in view of **Burokas (US Pub. No. 2003/0208675).**

Regarding claim 7:

Flouris discloses a plurality of client stations **(section 2.2: client stations). Flouris does not explicitly disclose** using the bootup PROM to control communications via the data programming network. **Burokas teaches** using the bootup PROM to control communications via the data programming network **(figure 5 506: PROM and PXE used).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Flouris and Burokas in order to reduce costs **(Burokas: [0002]).**

Regarding claim 8:

Burokas teaches the method as claimed in claim 7 wherein the low level micro-software module is loaded in the memory of the client station and executed using PROM **([0041]: client stores software).**

Regarding claim 9:

Burokas teaches the method as claimed in claim 6, wherein the low level micro software module is loaded in memory of the client station and executed as a component of BIOS of the client station, said micro software module providing the same functions as the access serviced on real hard disks provided by the BIOS **([0033]: virtual disks behave like normal hard disks).**

Regarding claim 10:

Burokas discloses a method as claimed in claim 6, wherein the low-level micro-software is loaded in memory of the client station from a third party data support supported as a startup peripheral by the client station **([0028]: software loaded on client through broadcasts).**

Regarding claim 30:

Flouris does not explicitly disclose modifying the loading sequence so that all components of the OS are loaded and usable at the moment when the OS accesses the emulated hard disk by the peripheral drivers and not by the BIOS. **Burokas teaches** modifying the loading sequence so that all components of the OS are loaded and usable at the moment when the OS needs to access the emulated hard disk by the peripheral drivers **([0041]: sequence adjusted).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Flouris and Burokas in order to reduce costs **(Burokas: [0002]).**

Regarding claim 31:

Flouris does not explicitly disclose the method as claimed in claim 21 wherein in order to accelerate the simultaneous access by several client stations to the same emulated hard disk whose data are contained in a data support accessible to a server station, the data are sent by the server station to the client stations using the

"broadcast" or "multicast" mechanisms. **Burokas teaches** using the global, broadcast and multicast mechanisms **([0029]: global, broadcast and multicast).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Flouris and Burokas in order to avoid sending data reluctantly **(Burokas: [0012]).**

Regarding claim 32:

Burokas teaches storing the streamed data by the client station in a local cache situated in the memory of said client stations **([0012]: data temporarily stored in cache).**

Regarding claim 33:

Burokas teaches the method as claimed in claim 31 wherein a read request for data the in emulated hard disk issued by the operating system of a client station generates an explicit data reading request sent to the server station only if said data are not already present in the local cache **([0041]: when data needed, request made).**

Regarding claim 34:

Burokas teaches the method as claimed in claim 33 wherein the data in the local cache are removed after being read by the client station so as to free up space in said local cache **([0062]: cache emptied after data is no longer needed).**

Regarding claim 35:

Burokas teaches the method as claimed in claim 31 wherein the decision to send data by multicast/broadcast is made at the server module level which provides the functionalities necessary for the hard disk emulation at the client stations **([0044]: multicast and broadcast used).**

Regarding claim 36:

Burokas discloses the method as claimed in claim 31, wherein the client stations may modify their subscription to receiving the data sent via broadcast/multicast by the server station **([0044]: can choose to send data to only one client).**

Regarding claim 37:

Burokas discloses the method as claimed in claim 32, wherein the client stations may erase the data form the local cache after a certain parameterizable time **([0062]: cache emptied after data no longer needed).**

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. **Examiner's Remarks:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shambhavi Patel whose telephone number is (571) 272-5877. The examiner can normally be reached on Monday-Friday, 8:00 am – 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

/Kamini S Shah/
Supervisory Patent Examiner, Art Unit 2128